

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID:

K00003009

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00003009001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

EMORY012.1RO

Date/Time Collected:

10/20/2009 12:28

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH:

7.47

pH Units

Chlorine, residual:

Conductivity:

48

uMHO

Temperature: 12.96

Dissolved Oxygen: 11.67

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009				M Pattanayek	10/21/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	170	μg/L	2.9	10	A Wilson	10/28/2009	

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	64	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	21	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.26J	μg/L [°]	0.04	1	M Pattanayek	10/21/2009
Copper	Ū	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.13J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	37	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.23J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009001

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

10/20/2009 12:28

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH:

7.47

pH Units

Chlorine, residual:

Conductivity:

48

uMHO

Temperature: Dissolved Oxygen: 11.67

12.96

mg/L

Other:

Flow:

CFS

TEST: Mercury	METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Mercury	0.06J	μg/L	0.029	0.2	A Bass	10/27/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00003009002

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 2.1

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

10/20/2009 10:18

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC **TDEC-WPC**

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

pH:

7.36

pH Units

Chlorine, residual:

Conductivity:

46

uMHO

12.73 Temperature: Dissolved Oxygen: 10.48

Other:

Flow:

CFS

mg/L

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009				M Pattanayek	10/21/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	330	μg/L	2.9	10	A Wilson	10/28/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	200	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	24	μg/L	2.5	- 5	M Pattanayek	10/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.26J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	U	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.30J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	32	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.1	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.08J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

10/20/2009 10:18

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH: 7.36

Chlorine, residual:

Conductivity: 46

Temperature: 12.73

Dissolved Oxygen: 10.48

mg/L

uMHO

pH Units

Other:

Flow:

CFS

TEST: Mercury	MET	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit -MQL - Method Quantitation Limit

K00003009003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' d/s from middle dredge point

13:36

Sampler Project Name: TVA Ash Spill

Project Site No.:

2A

Station No.:

Dredge Plume

Date/Time Collected:

10/20/2009 10:36

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

Received By:

E McCrary

Field Determinations

pH: 7.11

Chlorine, residual:

Conductivity:

45

uMHO

pH Units

Temperature:

12.84

mg/L

Dissolved Oxygen: 10.30 Other:

Flow:

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009				M Pattanayek	10/21/2009

TEST: ICP	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	430	μg/L	2.9	10	A Wilson	10/28/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	430	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	3.8J	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	38	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	0.13J	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	Ū	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.46J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	1.4	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.68J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	36	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.09J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	2.3J	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009003

Project Name:

TVA-Ash Spill

Sample Description:

Approx 100' d/s from middle dredge point

10:36

Sampler Project Name: TVA Ash Spill

Project Site No.:

2A

Station No.:

Dredge Plume

Date/Time Collected:

10/20/2009

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

TEST: Mercury

E McCrary

ME.	THOD:	FΡΔ	245 1	

Field Determinations

Dissolved Oxygen: 10.30

Chlorine, residual:

Conductivity:

Temperature:

7.11

45

12.84

:Hq

Other: Flow:

pH Units

uMHO

mg/L

CFS

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.03J	μg/L	0.029	0.2	A Bass	10/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009004

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

Project Site No.:

2B

Station No.:

EMORY001.9RO

Date/Time Collected:

10:48 10/20/2009

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

:Hq

7.16

pH Units

Chlorine, residual:

Conductivity:

48

uMHO

Temperature: Dissolved Oxygen: 10.30

13.01

mg/L

Other:

Flow:

TEST: Digestion Metals	MET	0.2		e.		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009		19		M Pattanayek	10/21/2009

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	480	μg/L	2.9	10	A Wilson	10/28/2009

TEST: ICP-MS	MET	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	600	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	0.47J	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	5.4	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	50	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	0.16J	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	2.4J	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.63J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	2.0	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.92J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	36	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.8	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.11J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	4.3J	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	3.0J	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009004

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 1.9 at underwater weir

Project Site No.:

2B

Station No.:

Date/Time Collected:

EMORY001.9RO

Sampler's Name:

10/20/2009 10:48

County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency:

Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

TEST: Mercury	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/27/2009

Field Determinations

Dissolved Oxygen: 10.30

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.16

48

13.01

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected: EMORY001.7RO 10/20/2009 11:02

Sampler's Name:

Geoff Klein

County: Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

pH:

7.11

pH Units

Chlorine, residual:

Conductivity:

47

uMHO

Temperature:

13.03 Dissolved Oxygen: 10.32

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009				M Pattanayek	10/21/2009

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Iron	420	μg/L	2.9	10	A Wilson	10/28/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	420	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	3.5J	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	36	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	0.11J	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.44J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	1.2	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.75J	μg/L	0.10	1.	M Pattanayek	10/21/2009
Manganese	35	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.08J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	2.5J	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

10/20/2009 11:02

Sampler's Name: County:

Geoff Klein

ROANE - 73

Sample Matrix:

Water

EFO:

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

TEST: Mercury	METHOD: EPA 245.1				,	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/27/2009

Field Determinations

Chlorine, residual:

Dissolved Oxygen: 10.32

Conductivity:

Temperature:

7.11

47

13.03

pH:

Other:

Flow:

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009006

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill **Project Site No.:**

Station No.: EMORY000.1RO Date/Time Collected:

Sampler's Name:

10/20/2009 11:20 Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

:Hq

7.08

pH Units

Chlorine, residual:

Conductivity:

50

uMHO

Temperature: Dissolved Oxygen: 10.06

13.71

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009		-,		M Pattanayek	10/21/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	430	μg/L	2.9	10	A Wilson	10/28/2009	

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Aluminum	420	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	3.6J	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	36	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	0.11J	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	. U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.46J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	1.3	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.74J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	34	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.8	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.07J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	3.4J	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	2.1J	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009006

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

10/20/2009 11:20

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency: Billing Code:

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH:

7.08

pH Units

Chlorine, residual:

Conductivity:

50

uMHO

Temperature: 13.71

Dissolved Oxygen: 10.06

Other:

Flow:

CFS

mg/L

TEST: Mercury	ME ⁻	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00003009007

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

4FD

Station No.:

EMORY000.1RO

Date/Time Collected:

10/20/2009 11:20

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH:

7.08

pH Units

Chlorine, residual:

Conductivity:

50

uMHO

Temperature:

13.71 Dissolved Oxygen: 10.06

mg/L

Other:

Flow:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009				M Pattanayek	10/21/2009

TEST: ICP	MET	ΓHOD: EPA 20	0.7			
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Iron	400	μg/L	2.9	10	A Wilson	10/28/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	350	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	3.0J	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	35	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.43J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	1.1	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.62J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	38	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.5	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.07J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	1.9J	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009007

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Project Site No.:

Sampler Project Name: TVA Ash Spill

4FD

Station No.: EMORY000.1RO

Date/Time Collected: Sampler's Name:

10/20/2009 11:20

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing Code:

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced: TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

pH:

7.08

pH Units

Chlorine, residual:

Conductivity:

50

uMHO

Temperature: Dissolved Oxygen: 10.06

13.71

mg/L

Other:

Flow:

CFS

TEST: Mercury	ME	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.03J	μg/L	0.029	0.2	A Bass	10/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00003009008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

10/20/2009 11:40

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Flow:	CFS
•	

7.59

201

14.76

pH Units

uMHO

mg/L

Field Determinations

Dissolved Oxygen: 9.03

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009				M Pattanayek	10/21/2009

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT	ANALYZED BY:	: DATE			
Iron	190	μg/L	2.9	- 10	A Wilson	10/28/2009

TEST: ICP-MS	· ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	120	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	1.0J	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	30	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.18J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	0.39J	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.23J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	33	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.03J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	U .	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

10/20/2009 Geoff Klein

Sampler's Name: County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC

Priority Date:

TDEC-WPC

Date/Time Received:

10/20/2009

13:36

11:40

Received By:

TEST: Mercury ANALYTE

Mercury

E McCrary

MET	THOD: EPA 24	5.1			
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
. U	μg/L	0.029	0.2	A Bass	10/27/2009

Field Determinations

Dissolved Oxygen: 9.03

Chlorine, residual:

Conductivity:

Temperature:

7.59

201

14.76

pH Units

uMHO

mg/L

CFS

:Hq

Other: Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.: **Date/Time Collected:** KingAshOutF2

10/20/2009 11:53

Sampler's Name: County:

Geoff Klein

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual:

65

7.38

pH Units uMHO

Conductivity: Temperature:

13.89 **Dissolved Oxygen: 10.13**

mg/L

Other:

Flow:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009				M Pattanayek	10/21/2009

TEST: ICP	ME	ΓHOD: EPA 20	0.7			
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Iron	330	μg/L	2.9	10	A Wilson	10/28/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	320	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	0.71J	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	9.2	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	37	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.31J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	2.3	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.41J	μg/L	0.10	. 1	M Pattanayek	10/21/2009
Manganese	34	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	2.2J	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	0.08J	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	8.9	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinç	2.4J	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

Project Site No.:

5A

Station No.:

KingAshOutF2

Date/Time Collected:

10/20/2009 11:53

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing. Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

	-	
Flow:		

uMHO

pH Units

13.89 Temperature: Dissolved Oxygen: 10.13

7.38

65

mg/L

Other:

Field Determinations

Chlorine, residual:

Conductivity:

:Hq

CFS

TEST: Mercury	MET	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009010

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: CLINC004.5RO

Date/Time Collected:

10/20/2009 11:29

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH:

7.58

pH Units

Conductivity:

246

uMHO

Temperature: Dissolved Oxygen: 8.58

15.12

mg/L

Other: Flow:

TEST: Digestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	10/21/2009		-		M Pattanayek	10/21/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	· ANALYZED BY:	DATE
Iron	130	μg/L	2.9	10	A Wilson	10/28/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Aluminum	62	μg/L	6.4	10	M Pattanayek	10/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	10/21/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	10/21/2009
Barium	30	μg/L	2.5	5	M Pattanayek	10/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	10/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	10/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	10/21/2009
Cobalt	0.16J	μg/L	0.04	1	M Pattanayek	10/21/2009
Copper	U .	μg/L	0.38	1	M Pattanayek	10/21/2009
Lead	0.20J	μg/L	0.10	1	M Pattanayek	10/21/2009
Manganese	38	μg/L	0.42	1	M Pattanayek	10/21/2009
Nickel	1.2	μg/L	0.25	1	M Pattanayek	10/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	10/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	10/21/2009
Thallium	U	μg/L	0.03	1	M Pattanayek	10/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	10/21/2009
Zinc	U	μg/L	1.9	5	M Pattanayek	10/21/2009

K00003009010

Project Name:

TVA-Ash Spill

Sample Description:

Field Determinations

Dissolved Oxygen: 8.58

Conductivity:

Temperature:

7.58

246

15.12

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Project Site No.:

Station No.:

CLINC004.5RO

11:29

13:36

Date/Time Collected: Sampler's Name:

10/20/2009 Geoff Klein

County:

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

Received By:

TEST: Mercury

E McCrary

METHOD:	EPA	245.1

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	10/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



STATE OF TENNESSEE **DEPARTMENT OF HEALTH ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID: K00003009

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00003009001

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 12.1

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

10/20/2009 12:28

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

Dissolved Oxygen: 11.67

Chlorine, residual:

Conductivity:

Temperature:

7.47

48

12.96

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	15	mg/L	3.8	10	M Chen	10/27/2009

TEST: Hardness, Calcium	m METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	22	mg/L	0.7	1	M Chen	10/27/2009	

TEST: Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/23/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009002

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

10/20/2009 10:18

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

Billing Code: Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH:

7.36

pH Units

Chlorine, residual:

Conductivity:

46

uMHO

Temperature: 12.73

Dissolved Oxygen: 10.48

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME	THOD: EPA 31	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	16	mg/L	3.8	10	M Chen	10/27/2009

TEST: Hardness, Calcium	ME.	THOD: SM 350				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	20	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L.	0.10	0.10	P Leathers	10/21/2009	

TEST: Residue, Suspended	ME.	THOD: SM 254	0D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/23/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009003

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Approx 100' d/s from middle dredge point

Project Site No.:

2A

Station No.: Dredge Plume

Date/Time Collected:

10/20/2009 10:36

Sampler's Name: County:

Geoff Klein **ROANE - 73**

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

pH:

7.11

pH Units

Chlorine, residual:

Conductivity:

45

uMHO

Temperature:

12.84

Dissolved Oxygen: 10.30

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	16	mg/L	3.8	10	M Chen	10/27/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	16	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009

TEST: Residue, Suspended	ST: Residue, Suspended METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	31	mg/L	10	10	A Peeples	10/23/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009004

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 1.9 at underwater weir

Project Site No.:

2B

Station No.:

Date/Time Collected:

EMORY001.9RO 10:48

Sampler's Name:

10/20/2009 Geoff Klein

County: Sample Matrix: **ROANE - 73**

Water

EFO:

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

_	issolved Oxygen:	10.30	mg/L
U	ther:		
-	l -		050

Field Determinations

Chlorine, residual:

Conductivity:

Temperature:

:Hq

Flow: CFS

7.16

48

13.01

pH Units

uMHO

TEST: Alkalinity, Total	Total METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	16	mg/L	3.8	10	M Chen	10/27/2009

TEST: Hardness, Calcium	ME:	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	18	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT UNITS		MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009	

TEST: Residue, Suspended	ME.	THOD: SM 254	0D	-		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	46	mg/L	10	10	A Peeples	10/23/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009005

Project Name:

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY001.7RO

Date/Time Collected:

10/20/2009 11:02

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

TEST: Alkalinity, Total	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	17	mg/L	3.8	10	M Chen	10/27/2009

Field Determinations

Dissolved Oxygen: 10.32

Chlorine, residual:

Conductivity:

Temperature:

7.11

47

13.03

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Hardness, Calcium	ME ⁻					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	17	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009

TEST: Residue, Suspended	ME					
ANALYTE	RESULT	UNITS	MDL	MQL A	ANALYZED BY:	DATE
Total Suspended Solids	25	mg/L	10	10	A Peeples	10/23/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009006

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

10/20/2009 11:20

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency:

Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

pH:

7.08

pH Units

uMHO

Chlorine, residual:

Conductivity:

50

13.71

Temperature: Dissolved Oxygen: 10.06

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME.					
ANALYTE	RESULT	UNITS MDL		MQL	ANALYZED BY:	DATE
Total Alkalinity	14	mg/L	3.8	- 10	M Chen	10/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	18	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009

TEST: Residue, Suspended	ME.			, , , , , , , , , , , , , , , , , , , ,		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	22	mg/L	10	10 ,	A Peeples	10/23/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009007

Project Name:

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Emory River mile 0.1

Project Site No.:

4FD

Station No.:

EMORY000.1RO

Date/Time Collected:

10/20/2009 11:20

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009

13:36

Received By:

E McCrary

Field Determinations

pH:

7.08

pH Units

Chlorine, residual:

Conductivity:

50

uMHO

mg/L

Temperature: Dissolved Oxygen: 10.06

13.71

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	15	mg/L	3.8	10	M Chen	10/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	18	mg/L	0.7	1	M Chen	10/27/2009	

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	20	mg/L	10	10	A Peeples	10/23/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009008

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

Project Site No.:

5

Station No.:

CLINC002.3RO

Date/Time Collected:

10/20/2009 11:40

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To: Agency Invoiced:

327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

Field Determinations

pH:

7.59

pH Units

uMHO

Chlorine, residual:

Conductivity:

201

Temperature: 14.76

Dissolved Oxygen: 9.03

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	93	mg/L	3.8	10	M Chen	10/27/2009

TEST: Hardness, Calcium	ME.	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	80	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/23/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00003009009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill **Project Site No.:**

5A

Station No.:

KingAshOutF2

Date/Time Collected:

10/20/2009 11:53

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

pH:	7.38	pH Units
Chlorine, residua	l:	•
Conductivity:	65	uMHO

Field Determinations

Temperature: 13.89

Dissolved Oxygen: 10.13

mg/L

Other: Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	19	mg/L	3.8	10	M Chen	10/27/2009	

TEST: Hardness, Calcium	ME.	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	25	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	Residue, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY	: DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009	

TEST: Residue, Suspended	METHOD: SM 2540D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/23/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00003009010

Project Name:

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

10/20/2009 11:29

Sampler's Name:

Geoff Klein

County:

Sample Matrix:

ROANE - 73

Water

EFO: Sampling Agency: Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To:

TDEC-WPC **TDEC-WPC**

Agency Invoiced: Priority Date:

Date/Time Received:

10/20/2009 13:36

Received By:

E McCrary

TEST: Alkalinity, Total	ST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	110	mg/L	3.8	10	M Chen	10/27/2009	

Field Determinations

Dissolved Oxygen: 8.58

Conductivity:

Temperature:

7.58

246

15.12

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Hardness, Calcium	ME ⁻	THOD: SM 350				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	97	mg/L	0.7	1	M Chen	10/27/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	10/21/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	10/23/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit